FINAL MEETING SUMMARY

HANFORD ADVISORY BOARD
TANK WASTE COMMITTEE
October 9, 2003
Richland, Washington

Topics in this Meeting Summary

This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Welcome and Introductions

Doug Huston opened the meeting and welcomed the committee. He briefly reviewed the agenda for the meeting.

The August meeting summary was adopted.

Department of Energy-Office of River Protection (DOE-ORP) Baseline

Steve Wiegman, Department of Energy-Office of River Protection (DOE-ORP), discussed the new DOE-ORP baseline. The baseline is now structured differently than in the past. Due to his restructuring, some of the questions have not been answered. This fiscal year, DOE-ORP will be managed as two principle projects; the construction of the Waste Treatment Plant (WTP) which is fully approved through hot commissioning and the baseline that has been set. The largest change is in the rest of the tank farm program; this will become a single project managed within the department. This will be very challenging because it is a long-term project with many components. This part of the project will include the vitrification plant operations. This piece of the project will also include all system operations, the waste retrieval and delivery system, the single-shell tank farm closure, the development and deployment of supplemental technology, disposal of low activity waste and removal, the shipment and storage of high-level canisters, and the WTP operations after hot commissioning.

John Swailes, DOE-ORP, is the director of this new project. The Department of Energy (DOE) is the director of the project, not the manager. The one exception is the canister storage building (CSB), which will continue as a separate capital project and will be funded as a line item. Steve noted one of the most significant changes with the baseline is in the past, it established the delta between the baseline and the contract funding. This delta no longer exists between these two. The funding profile must now match a contracting profile, which is laid out in a series of baseline change requests (BCR) that accommodate the difference between the two. Once this is done, the new baseline must be reviewed by a headquarters change board and then the under secretary. This ensures the baseline line will have a credible framework. The recommendations from these reviews are incorporated into the baseline. With a project of this scope, the challenge is how to best manage the baseline on an annual basis. The baseline includes very specific milestones for a variety of actions to ensure the productivity of the project.

The commitment to the schedule is not be diminished by this baseline but rather the schedule is being accelerated. DOE is committing to complete all the treatment by 2027 or sooner and the baseline is being structured to ensure this. For this schedule to work, it will be necessary for the baseline to be adequately structured. The facility will need to be completely commissioned on time and the supplemental technology will need to be online at the same time in 2011. Because the CH2MHill Hanford Group (CHG) contract ends in 2006, it is necessary to establish a contracting strategy that is committed to a stable project, which is completed on or ahead of schedule.
The team is in the process of developing a plan to retrieve all the single-shell tanks (SST) by 2018. The tank farms are now connected to the WTP site by pipeline and the systems are coming together. The C-106 closure demonstration is underway and the S112 demonstration has started. The issuance of the tank closure rod is underway and the Supplemental Technology environmental impact statement will be started in the spring. The intent is still to package some of the waste as transuranic waste (TRU) and ship it to the Waste Isolation Pilot Project (WIPP). The current baseline re-structuring supports this schedule and will provide the details of how this schedule will be accomplished. The key programmatic risks are put on the schedule to determine when these must be addressed. There are still many steps such as supplemental technology to determine and it is important to stay focus on risk management.

Leon Swenson asked if the push toward privatization of waste cleanup will change the way funding is allocated each year. Jennifer Sands, DOE-ORP, stated the only change is in the way money is allocated between projects. Only capital improvement funds must stay with a specified project. For all other projects within a same line item, funds can move between projects. Steve added this provides a more apparent picture of how funds are spent. In a project with this many pieces, it can be difficult to have the right context described at the correct levels and still ensure the BCR's are approved. Steve committed to DOE-ORP working with the Department of Energy Richland Operations (DOE-RL) to provide a site-wide baseline.

DOE-ORP Baseline Questions/Responses

The Budgets and Contracts Committee (BCC) previously submitted questions regarding the DOE-ORP baseline to be answered. Steve provided a handout with each of the committee's questions and a response to each of those. He briefly reviewed the answers to each of the questions with the committee.

The budget forecasts for the CHG responsibilities show significant changes, up to $100 million, per year. How will budget changes of this magnitude be effectively accomplished and not result in significant disruptions of the work force? The estimated cost and contract funding profiles have been brought into alignment for the contract period. No further significant disruptions to the workforce are anticipated.

o Gerry asked if the committee can receive the updated budget profile. Steve replied this will be available at the end of the year after it has been approved.

Could the committee receive additional information regarding the costs for tank closure? The current estimated cost for tank closure is substantially less than the cost of the C-106 demonstration project. Recent Value Engineering studies found overlapping layers of duplicative documentation, unnecessary engineering analyses, costly removal and disposal of contaminated but re-useable retrieval equipment, expensive restoration of supporting infrastructure, and less than optimum deployment of field resources. It is anticipated that many of these can be addressed to reduce overall costs.

Regarding tank closure, how will the work be accomplished? This will be done by; retrieving the tank per the ongoing retrieval program, preparing the necessary closure plans, other required documents and public involvement activities. The end state of tank closure will be decided through the appropriate regulatory processes. The costs for a tank closure range from two to ten million dollars. These estimates are based on data from other DOE sites, actual cost information, application of lessons learned, and the application of several suggestions from Value Engineering Studies.

o Todd Martin asked of DOE-ORP is still committed and will continue to stay committed to performance based retrieval? Steve replied this is the case.

o Suzanne Dahl, Washington State Department of Ecology (Ecology), asked if the closure plan for C106 original has been certified. Steve replied he thought Ecology had an interim closure plan. Suzanne stated it is a component closure plan for C106 and C farm. It is still necessary to consider the cumulative plan. Closure plan permits are in the process of being written and these will be released for public comment. The state continues to maintain that as much waste as technically possible must be retrieved. This is compliant with the Nuclear Waste Policy Act. The risk-based approach ignores that groundwater will be at the site forever and that it is important the aquifer not be degraded.

o Gerry Pollet stated this is a big change. Originally, interim closure was not to become final closure and an end-state. He asked how a final closure permit can be drafted without an EIS. Steve replied that no closure plan has been certified. Suzanne stated that

what is envisioned is that the work would be done through component closures. Dependent on how well the tank is retrieved interim closures could be taken which would become final. A closure plan permit cannot be issued until the Tank Closure Environmental Impact Statement (EIS) is released.

o Gerry asked how a permit can be processed without the proper risk analyses. Suzanne stated a cumulative look must be provided. A risk assessment has been completed that addresses vadose zone characterization, and an estimate of what residuals are left in the tank. There are also assumptions on what will be left in C106. This provides a general idea of what a permit will look like. A permit cannot be written until it is known what will be left in the tank.

o Gerry asked if the baseline will reflect the addition of a leak detection system before retrieval as well as a vapor emission control system. Steve replied that DOE-ORP has committed to demonstrating an advanced leak detection system. DOE-ORP fully intends to do both of these.

o Gerry asked if there is work underway, in terms of cost and baseline, to install adequate engineering controls. Steve replied that each of these activities is negotiated individually with Ecology as specific retrieval activities are pursued. Gerry asked if Ecology has required any engineered controls. Suzanne replied her understanding is that there are "notice of construction" air permits for C106.

What is the schedule for the performance of the required tank closure work and regulatory compliance? The current baseline schedule will provide retrieval and interim closure of 26 tanks over the next three years. The number of tanks per year will depend on double shell tank space, waste treatment plant interfaces including waste feed characteristics, waste types, regulatory approvals, and availability of supplemental treatment/disposal pathways. All tanks required by the Tri-Party Agreement (TPA) are currently scheduled to satisfy the TPA requirements.

How does the proposed tank closure schedule relate to TPA commitments? The proposed schedule for single shell tank retrieval and closure supports TPA commitments including modifications to the M-45 milestones in the recently approved Change Request M-45-02-03. Due to the integral relationship between waste treatment capacity, double-shell tank (DST) space, and SST retrieval rates, the current project completion of SST retrieval and closure is 2024.

What are the risks to the workers, public, and environment for the proposed actions? Many studies have estimated the impacts from the various activities proposed at Hanford. The most comprehensive estimate of risk for tank waste activities was completed in the 1998 TWRS EIS. The TWRS EIS included risk to tank retrieval options. A second EIS is under development to examine closure and disposal options for tanks and tank wastes. Safety to the worker, public, and the environment is central to DOE-ORP's operation of the Hanford Site. Analysis of risk at Hanford is a continuous and ongoing process. Risk

to the worker is embedded in the work planning process and the Integrated Safety Management System (ISMS).

How will the removal of TRU waste from the tanks be accomplished? A vacuum system will be used as the waste retrieval approach for all of the 200 series tanks. The vacuum is introduced to the tank waste by means of an articulating mast system (AMS) that has a horizontal reach of 15 feet, and rotational capabilities of 360 degrees. This system is identical to the AMS and vacuum system designed for tank C-104 and used in the mobile retrieval system design.

When will the required National Environmental Protection Act (NEPA)/Resource Conservation and Recovery Act (RCRA) reviews and Records of Decision (ROD) for the proposed acceleration actions that are excluded in the baseline be available? NEPA reviews are currently ongoing. Low-level mixed waste (LLWM), contact-handled (CH) TRU, and remote handled (RH) TRU activities will be evaluated as part of the Tank Closure EIS. However the extensive body of existing NEPA documentation that has been developed for the tank waste is currently being evaluated to determine if it already provides NEPA coverage for CH-TRU activities. The Tank Closure EIS is under preparation, and public review is scheduled for the December 2003 timeframe. Issuance of a ROD is planned for Spring 2004.
Discussions are ongoing with Ecology on RCRA permitting for the CH-TRUM Waste project, and permitting documentation is scheduled for submittal to Ecology for review in October 2003.

o Several committee members stated they are surprised to see that DOE-ORP is trying to use existing NEPA documentation for EIS coverage of current TRU activities. This will be discussed in the afternoon's EIS discussion.

When will an acceleration program schedule and funding profiles at the WBS level be available? These should be available in December after they are approved.

o Harold Heacock asserted that that the committee had been led to believe these items would be available in October. Steve commented that the approval process has been lengthened due to changes in the baseline. As the project has evolved so has the review process. He is also frustrated that he does not have the requested information.

o Melinda Brown, Ecology, asked if DOE-ORP is working with DOE-RL to develop a site-wide baseline. Steve replied that the fundamental structure of the site-wide baseline has been developed. Discussions are in progress to address how to mesh all the parts together.

What previously approved work scope items have been deleted from the present baseline? Any scope that is not needed to achieve TPA commitments has been removed. Examples are: Miscellaneous and unscoped equipment upgrades were deleted. Equipment will be fixed where required by maintenance staff. Additional high-level waste storage modules that are not required per the repository-shipping schedule were deleted.

o Jeff Luke noted that the Health, Safety and Environmental Protection Committee (HSEP) would be interested in what the deleted equipment upgrades were.

o Al Boldt asked if the third low activity waste (LAW) melter does not meet the definition of scope. Steve replied they were thinking of this in terms of the DOE line item and the CHG baseline for the WTP not the TPA. He will find the point at which this was removed.

How many of the SST's in the initial closure list are leaking or were previously classified as leaking? None of the tanks are known to be currently leaking. The Integrated Management Acceleration Plan (IMAP) identified 12 tanks as potential or historical leakers.

Is a specific work plan available for the retrieval of material from the initial group planned for closure? A "functions and requirements" document supports each tank retrieval. These documents are reviewed and approved by Ecology. Appropriate RCRA closure plans are being developed to support the closure activities.

What work and funding are included in WBS 5.07.02? Work includes activities not otherwise covered by other WBS elements to comply with the TPA. This includes compliance efforts to meet the requirements of TPA milestones M-23, M-48, and M-46. It also includes Tank Farm Contractor involvement in site-wide permitting and reporting, compliant solid waste management operations, compliance upgrades to the DST systems, and tank waste volume management operations.

oGerry commented the committee wanted to link dollars with the work being done. Steve replied when the updated BCR is approved he will provide that level of detail.

What is the work task and funding relationship between the BCR, IMAP, and the TPA? The BCR is a statement of what the contractor wants to achieve. The TPA lays out the fundamental regulatory process and the commitments to achieve. The primary target is the TPA commitments. The TPA is what has to be met the BCR has to meet the TPA, and the IMAP is how the contractor is going to meet the BCR.

What additional information support the $1.4 billion supplemental technology life-cycle cost? Life cycle cost estimates, scope descriptions, schedules, and assumptions are being matured as part of the technology selection process. Current estimates are $0.9 billion to $1.5 billion. These figures include the secondary waste streams.

Is the estimated $20 billion life-cycle reduction for processing tank waste still valid? DOE-ORP believes this figure is still valid. The FY 2001 DOE-ORP life cycle cost in the DOE financial statements was $46.1 billion. Savings to date include: 1) the elimination of the second vitrification facility, $12B and 2) revised waste retrieval estimates moving from a technology demonstration approach to a production approach which makes more use of standardized equipment, fewer technology demonstrations, and

fewer equipment procurements since the equipment will be mobile and deployed on multiple tanks, ~$6B.

The basis for this estimate: The estimated $20 billion savings for the tank program in the 2002 Hanford Performance Management Plan (HPMP) was a rough order of magnitude estimate based on possible savings that might be achieved through the acceleration of tank retrieval, treatment, closure, and elimination of the second vitrification facility.

o Gerry asked what the justification was for the removal of the second plant. Jennifer Sands, DOE-ORP, replied this was from the 1995 baseline. Gerry noted this baseline tracks the privatization baseline estimate for the second phase.

o Gerry asked if supplemental technology will really save $20 billion. Steve replied this figure is based on the early project figures and the baseline currently being projected. Gerry asserted that DOE-ORP is using an inflated cost figure for the second plant. It is not truly clear if there is a cost savings achieved by not building the second plant. Suzanne added that she is concerned that decisions are being made in the 2005/2006 timeframe and one of the possibilities is a second vitrification plant. If supplemental technology is proven to be as efficient as glass then that will be useful in making sound decisions in 2005/2006. She shares Gerry's concern that this baseline is not an adequate base to have a discussion from.

o Jeff Luke asked if DOE-ORP appears to be using the 1995 baseline that included higher costs because it reflected the privatization concept. Jennifer replied the 2001 baseline was used for comparison purposes. However, the updated costs for the WTP were not included nor was the second plant and the associated $12B cost. Gerry asserted the public is being misled into thinking the potential savings are much higher than they actually are.

Gerry next month give the rough life cycle cost of meeting the TPA for the ….

o Gerry stated that there is not an estimate for what the cost savings would be from diverting from the TPA path. Steve replied they are still trying to determine this. Gerry replied that he is concerned that the $20B savings estimate is being presented on a misleading basis because it was based on a discredited plan.

What are the estimated costs of the additional infrastructure needed to add the third LAW melter? This will be evaluated if required. Two melters can process the same amount of waste as three due to throughput constraints. Gerry commented that the committee believes this is a significant issue for advice. The committee initially asked for this information because it is the most cost efficient and lowest risk method of treatment is to have the third melter.

How much of the LAW is plan to be vitrified? Based on the System Plan Rev. 2, there are two cases being evaluated.

Case 1 is the Target Case. Under this case, 40% of the LAW waste stream will be processed through the LAW Vitrification Plant and 60% is planned to go through supplemental treatment. If Bulk Vitrification technology is selected, the remainder of the LAW waste stream would be processed as bulk glass (a bounding case). However, there are three supplemental technologies being considered which could result in a reduction in the amount that would be processed as Bulk Vitrification.
Case 2 is the Stretch Case. Under this case, 60% of the LAW waste stream will be processed through the LAW Vitrification Plant and 40% is planned to go through supplemental treatment. Again, if Bulk Vitrification is selected, the remainder of the waste stream would be processed as bulk glass (a bounding case). If the other technologies are selected, the amount of glass would be reduced accordingly.

How will the increased vitrification plant cost be coordinated with increased CH2MHill cost projections to provide a flat funding profile? There is no change in the annual funding requirements for the River Protection Project. The increased Waste Treatment Plant cost does not modify the $690M funding level, it just adds two more years at $690M. In addition, the CH2MHill contract states that DOE will provide $360M annually for FY 2004-2006.

Committee Discussion

- Gerry stated the committee did not get the information it asked for. There are significant advice issues resulting from this. One is the TRU issues should be covered solely in one EIS. Secondly, when the questions about the low activity melter were framed it was to aid in November's discussion. It now appears that the best investment would be to include a third law melter instead of the other supplemental technologies.
- Gerry added it is important to note the estimate of supplemental technologies saving $20 billion is inaccurate. Doug Huston added that there are two questions. One is if $20 billion is still the accurate cost for completing the mission. Second, what is the cost comparison between building the second low activity waste facility and supplemental technologies?
- Suzanne asked what the cost benefit is of adding the third melter and what are the additional costs of making the necessary modifications. Doug noted there are additional questions stemming from the original set of questions.
- Harold stated he is disappointed in these responses. His concern is that DOE-ORP and Ecology are moving toward supplemental technology. While this may be the correct way to go, there are still a number of questions and risks that need to be resolved before a decision is made. It is important to identify the risks before resources are irretrievably committed. Doug proposed developing a new set of questions to submit to the Board in November, which would then be give to DOE-ORP for responses. Greg Jones, DOE-ORP, stated a lot of effort was given to answering the questions today. Doug clarified that these responses have brought up more questions.

- Gerry reiterated that it is misleading to suggest that using supplemental technology results in a $20 billion savings. It is also unwise to proceed as if removing the third melter is a given because it may still be the best investment from a risk and cost standpoint. Suzanne replied that the permit modification for the removal of the third melter will be released for public comment in the next couple of months.
- Al asked if the committee should offer any advice. The committee stated that advice is needed on the $20 billion figure, TRU, and supplemental analysis.
- Todd stated it is appropriate to issue advice on the $20 billion figure. The Board should formally submit comment to Ecology on the permit modification for the removal of the third melter. It is not clear from DOE-ORP's answers where the rigor in the decision making process is. Where is the public discourse, how were decisions made?

Status of M-45 Negotiations

John Swailes, DOE-ORP, briefly reviewed the status of the M-45 negotiations. These negotiations will establish milestones for near term SST retrieval and closure between now and 2006. The second part of the negotiations, milestone M-45-00C, drives the planning for the second phase of SST retrieval and closure between 2006 and 2015. Having this process split adds operational and procedural flexibility, for example there may be eight tanks scheduled during the first phase. Any of these tanks may be completed at any point during this time without additional paperwork or negotiations. What results from these negotiations will be a streamlined and integrated closure process. There will be an annual update to the TPA agencies to provide an update on progress and the current status.
Preliminary meetings were held in September and October for information exchange and discussion. Formal negotiations will begin in November; these must be completed no later than February 2004. DOE-ORP's goal is to reach full agreement with Ecology on how to proceed with SST retrieval and closure mission.

Rodger Stanley, Ecology, stated that M-45-00C is a major milestone so the Environmental Protection Agency (EPA) will be involved with these negotiations. The M-45 series of milestones is the largest in the TPA. These milestones cover basic activities such as, waste retrieval, closure of tanks and tank farms, and corrective actions over time. Schedules for M-45 have been developed and these have been split into three phases.

M-45-00A identified seven tanks for near term closure. Two basic criteria were used in developing the schedule for these closures, up front risk reduction and develop demonstration projects that help craft the closure process.

The milestone runs from 2006 to 2015. It was agreed that any modifications that Ecology felt necessary in the near term would be incorporated if rebalancing is needed between now and 2006. The new milestones run through the startup of WTP operations and beyond. This is the major portion of work. When the first seven tanks were chosen there

were only two criteria, for the next set, there will be a larger set of basic guiding principles. These include:

Maintaining the focus on near term risk reduction
Providing balance feed to the WTP
Being sensitive to the need or lack of need for additional storage space

A great deal of attention will be focused on maintaining the tank farm work force. There is a tremendous amount of work to do in the tank farm and it is important to have an experienced work force.

Negotiations have not started yet. All parties are working to identify issues to address and the scope of the negotiations. From a regulatory standpoint, the overall enforceability of something so dynamic and flexible will be challenging. An effective modification to the TPA must be found.

The negotiation teams are charged with developing sufficient milestones. Currently, there are four to five milestones for each tank. One of the challenges is to develop an enforceable matrix of milestones and a template so there is a standard system that all involved can follow. The outcome of the 431.5 negotiations is important because it deals with similar issues. It is important to get enough waste out of the tanks and systems so the public and state know that a credible job has been done with the accelerated schedule. It is important that the job is not done hastily.

There is not a lot of time to complete all this work because the TPA requires that this job is finished within a certain timeframe. The input of stakeholders is important and a notice will be released to determine what the interest level is and what type of participation would be best.

Committee Discussion

- Al clarified that there are up to five milestones per tank. Rodger stated that is what the TPA has required to date. Moses Jarayssi, CH2MHill, added those were developed in order to establish a process but it won't work for long-term closure plans. While this will be changed, there will still be an effective regulatory process.
- Doug asked how these negotiations will align with the Tanks EIS. John replied that this lays out a defined sequence for the double shell tanks. M-45 lays out the sequence but the EIS determines the outcome. M-45 provides the opportunity to balance everything learned to date. Rodger added that no final closure activities may begin until the EIS is released. The EIS will need to be released and permitting decisions will need to be made well before any closure decisions are made. These are all closely related and it is important to see how they weave together.
- Todd asked how the EIS will be bounding if 10% of the waste is left in the tank. Suzanne replied that the EIS is the bounding document but that the ROD is the direction you think you will be going. For the TWRS the worst scenario was not

chosen. Todd noted from a legal standpoint, as long as the breadth was analyzed that is fine, the ROD does not hold.

- Dan Simpson asked how this is consistent with the EIS process. He also asked how risk-based end states process affects the EIS program and M-45. Rodger stated negotiations are based on the existing requirements of M-45. Doug stated that this question was asked this morning and DOE-ORP committed to the 99.9% figure. Rodger clarified that was noted as a variance because it is a performance-based decision.
- Suzanne stated the EIS is information that is fed into the decision which then feeds into the closure plan permit decision. The closure plan is the decision that actually allows work to take place. The ROD cannot identify that closure activities will be done. Steve added that the EIS is an enabling step that allows the permit process to begin. A closure decision cannot exceed any of the information from the EIS.
- Doug asked the committee if there is anything they want to contribute. The Board has provided principles and tank retrievals but there is the new aspect of a reduction in milestones. While it is important for DOE-ORP to have flexibility, it is also important for Ecology to have enforcement capability.
- Todd suggested it would be best to wait until there is a change package and comment on that. Rodger stated he would like to keep the committee posted the negations as they are happening. Doug suggested a standing M-45 update.

Tank Waste Environmental Impact Statement Update

Doug provided the background of the Board's concern. The Board has sent advice requesting further investigation of if the waste in the eighth tank is TRU. It is important to look at the various NEPA aspects of this. A supplemental analysis has been completed to see if previous NEPA coverage is adequate. There is concern that the committee did not know about this. This appears to be an end run around the NEPA process.

Steve stated there was the opportunity to investigate using the TWRS EIS as the base document. This was reviewed internally and sent to headquarters for their review. The work could either be:

Completely bounded by the previous EIS.
Bounded by an alternative in the EIS that was not chosen.
Outside the bounds of the EIS.

If it is bounded, no further review is needed. If it is bounded by an alternative that was not selected, a new ROD must be developed which is released for public review. If it is outside the bounds of the EIS a full EIS process must be completed. It appears this work will be bounded by the previous EIS.

Committee Discussion

- Doug stated it was envisioned that all the waste would be vitrified and now it appears one of the waste streams will not be vitrified. Steve replied the scope is to remove the TRU mixed waste. This decision would be in the tank closure EIS.
- Doug asked what the logic is of describing this as bounded by the EIS when vitrification will not be used. Steve replied that from a programmatic perspective, the scope of the analysis does not include the final disposition. This would be covered in the EIS.
- Several committee members noted they are uneasy with this process.
- Suzanne asked what approach is used when there was a co-author for an EIS that is to be used for a different reason. Is there an obligation to involve the co-author? Steve responded that he understood Ecology had been involved with the EIS. Suzanne stated she had not heard this was the chosen path until the document had been sent to headquarters.
- Doug asked the Board could look at this document before it gets approved. Steve and Steve replied that they will take it under consideration and talk to the program staff.

Tank Closure Environmental Impact Statement

Mary Beth Burandt, DOE-ORP, provided the committee with a brief update on the Tank Closure EIS. The internal review of the document was completed on August 19. This review focused on the EIS at a high level. Two modifications were made to the alternatives. One at the direction of the DOE-ORP manager and the other due to comments received related to the all vitrification option.

As a result of the additions of alternatives and staff health problems, there is a six-week delay in the schedule. The comment period for the draft EIS will be 45 days. Public meetings will be held January 13, 14, 15, and 20. The final EIS will be published on April 16, 2003. The ROD will be issued on May 28, 2004.

The Board has requested an extension to the public comment period. DOE-ORP has proposed a two-day Board workshop January 7-8 to discuss the EIS. DOE-ORP has requested that the Board consider moving its February meeting to late January.

Committee Discussion

- Leon Swenson asked what will happen if it is not possible to move the Board meeting to January. How will the Board be able to speak as a body?
- Doug noted it would be less expensive for DOE to extend the comment period a week.
- Harold noted in the past the Board has submitted its comments a week late. NEPA states that comments will be accepted to the extent possible after the closure of the comment period.

- Todd asked if the EIS will be available on the 17th or will it be in hand? The concern is that this schedule is not realistic. This is a multi binder document that is being released days before Christmas. DOE-ORP is then expecting people to have read this in preparation for a workshop a couple of days after New Year's. He stated that he fully anticipates public interest groups and tribes being unable to meet this timeline. From the Board's standpoint, it would be best to have the workshop as suggested and be at risk on submitting comments. He added that he is not confident the document will actually be available on December 17.
- Mary Beth stated that regardless of the dates DOE-ORP would like to sit down with the Board. It has been a struggle to communicate this EIS and it would be helpful to have the Board's perspective.
- Todd re-emphasized that he does not believe this timeline will be met. Headquarters will have comments on the draft that will require attention before the release. He noted the Board is being asked to spend additional time in meetings.
- Leon asked if the public meetings will continue as currently laid out barring a problem at headquarters. Mary Beth stated that the public meetings were shifted due to the shift in scoping. These meetings will fall at the later end of the document period. Todd stated if any help is needed designing the public meetings to let the Public Involvement Committee (PIC) know.

Supplemental Technology Downselect Information

Rick Raymond, CHG, provided a summary of the compilation of the data. A tremendous amount of information has been gathered over the last year. A series of workshops has been held between Ecology, Vendors, EPA, DOE, and the contractors. The data was analyzed and a consensus evaluation was reached for each technology. In many cases, the numerical comparisons were available and these are provided wherever possible in the handout. This was not the consensus of the workshop but rather is comparative data. One conclusion reached however was that with the exception of one, none of the goals and measures were effective discriminators among the technologies. The only clear discriminator was waste form performance.

The handout provided the system plan for the target case. The high-level waste is what controls the critical path for immobilization of all tank waste in accordance with the IMAP. This is because supplemental low activity waste treatment is needed in addition to the low activity waste treatment now planned in order to maximize the high-level waste production. The additional production will be needed in 2011.

A risk assessment will be performed using robust tools with the best available data. Additional analyses will be performed to provide decision-makers with needed information such as the inclusion of secondary wastes. Sensitivity analysis will be performed based on inventory changes. A full performance update will be completed in July of 2005. An extensive suite of sensitivity analyses has not been performed. However, information should be sufficient for decision-making on Decision for Further Testing.

Two of the issues to consider are Iodine and Technetium (Tc). Iodine is found in Bulk Vitrification, Steam Reforming, and Waste Treatment Plant secondary waste; and in the cast stone product. The Iodine inventory is suspected to be conservative. Iodine mitigation is a process step that could be added if necessary. Technetium is found in the cast stone product slightly above the maximum contaminant level (MCL) at 30% of the total waste. WTP secondary waste is higher than previously reported. No action will be required if thermal treatment is used. The conclusion is that Iodine is the issue not Technetium. If a problem exists, it is in the secondary waste from thermal treatment, not the product.

The key uncertainties for this project are as follows:

Inventory: The amount of inventory in each waste form is unknown. The average Inventory versus the actual inventory is unknown. The amount of inventory in Secondary waste must be determined.

Limited Database for Bulk Vitrification

CoCs are not fully immobilized for Bulk Vitrification: TC Salt forms in the secondary phases. It is important to understand the inventory in the forth layer and surrounding sand. The size and surface area of the forth layer is important as are the degradation properties of the forth layer.

Conceptual model for cast stone release: The vendor attempted to produce reduced Tc. If key CoCs are reduced for how long is this true? Are key CoCs porous in water or are they incorporated into the structure?

Limited database for steam reforming: Only one stimulant material from one batch was available for testing. The processing system is smaller than the production size and of slightly different design. There is a very limited database for Nosean, the mineral assumed to trap CoCs. The solubility of Nosean is a key parameter.

The surface area for steam reforming: Steam reforming has a much larger surface area than other proposed waste forms. Because steam reforming does not form secondary phases, pore water in the steam reforming quickly saturates and release rate quickly reaches its maximum value. The intruder scenario failed under some conditions. The immobilization mechanism for steam reforming is not proven for all constituents in Tank Farm wastes.

The path forward for secondary waste will include:

The evaluation of inventory, which is an ongoing effort
The evaluation of the ability of cast stone to immobilize Iodine
The mass balance of secondary wastes will continue to be measured during Future testing.

The results of these evaluations were more complex than originally expected. Secondary wastes are more important for groundwater impacts than products form thermal treatment. The current formulation of cast stone does not meet environmental standards.

The results for steam reforming inadvertent intruder may be higher than other waste forms because of high density of loading and because of fine products. Groundwater impacts from thermal treatment products generally are low and are comparable to each other.

Committee Discussion

- Leon asked if the cast stone used was the best formulation. Rick stated this was the best the vendor was able to develop. They knew that Tc-99 would be an issue. They asked for six months of additional time to do a better job however, the rules were if the parameters were exceeded that technology would not be chosen.
- Al asked if the nitrite levels went over the limit. Rick replied they did by 30%.
- Doug asked which waste form will be used to treat the secondary waste. Suzanne replied that steam reforming appears to be the best option but there is a lot of uncertainty.
- Al asked if sulfate was present in the steam-reforming product. Rick stated that the levels were not as high as cast stone.
- Leon asked if different stimulants were used. Rick stated that the Pacific Northwest National Laboratory (PNNL) found this should not make a difference nor does the stimulant formulation make any difference. However, steam reforming for example does not have enough information associated with it.
- Doug asked how many samples of Bulk Vitrification and cast stone product were tested. Rick replied that 20 different direct formulations were tested and multiple sensitivities were then used for Bulk Vitrification. Associated testing was built into the background information of the glass variations. Doug asked why only one sample was used for steam reforming. Billie Mauss, CHG, stated it was cost prohibitive to run a spike sample. Rick added that they are anxious to test more samples of the steam-reforming product.
- Al commented that the data indicates the cast stone formulations are effective in containing iodine. Rick replied that iodine becomes an issue later in the process.
- Al stated that there is an inadequate database for steam reforming.
- Dick Smith stated that there are not the same problems with steam reforming that there are with Bulk Vitrification. The volatiles are driven off and captured either as melt or secondary waste. Condensate results form this and then the iodine volatilization comes form that.
- Suzanne stated that Ecology is concerned about where the contaminants ended up. Bulk Vitrification testing was able to determine a materials balance however, steam reforming was not being run as a complete system so the resulting information is not based on direct measurements.
- Harold stated that these are all very short-term results. The Nuclear Regulatory Commission (NRC) criteria for waste criteria are all long-term test results. He asked if long-term testing is planned. Rick stated there is a waste form qualification

workshop with Ecology. The waste form qualification program will begin next year. Accelerated leach testing will be employed. A full suite of tests will be completed. Harold asked if a final selection will be made before all the test results are back. Rick stated the glass already has a developed body of knowledge. Steam reforming does not have that body. Waste form qualification is something that is done continuously.

- Al stated that the awarding of the contract has been delayed in deference to the Board. He asked if only one contract will be awarded. Rick replied that it is unlikely it would be cost effective to choose two technologies. Al stated that then this would in fact be a downselect to one choice. Rick replied that it will be one of the thermal processes. Al noted that if only one is chosen then in effect, the decision has been made.
- Suzanne stated that Ecology is not supportive a long-term facility that does not take feed from the pre-treatment facility.
- Doug commented that this discussion grew out of the fact that the Board felt left out of the downselect decision. The decision has been delayed to December and therefore, the Board needs to offer advice of some kind.
- Al stated he believes DOE-ORP is moving in the right direction. He would like to see another option in the downselect that uses the third melter in the LAW facility for comparison and iron phosphate glass. There is currently a good database for iron phosphate and with three melters running, it comes closer to vitrifying all the waste by 2018 at a lower cost.
- Harold noted that there are still some questions that need to be answered. However, to date a commendable job has been done. A lot of ground has been covered in a short time.
- Doug stated that he is concerned the downselect decision has become an economical decision rather than a technical one. Billie Mauss, CHG, replied they will have to see what cost figures the vendors submit. Some of the figures are high because there are licensing issues involved. Doug added that the point is Bulk Vitrification has a compliance issue. What is the certainty that this can be addressed through engineering? Suzanne stated that there uncertainties with all the forms.
- Leon commented that the "good as glass" requirement is a starting point. He asked why there are MCL's. Suzanne replied that borosilicate glass is part of the TPA for a series of historical reasons and the director of Ecology on down has stated that anything different must perform as well as this waste form. Leon clarified that he is questioning if the right criteria have been used form the beginning.
- Leon stated that his point is why is this performance based assessment being used if the site is serious about risk-based assessment. This has forced the project into a one solution does all box. Suzanne stated that either the solution that best suits all needs must be chosen or a way must be found to fund all three.
- Harold asserted that a final irrevocable decision is not being made. This is only a path forward. Two technologies have been selected for further investment and study.

Planning for the November Board Meeting

The committee will be providing information on supplemental technologies at the November Board meeting. The impression is that many Board members do not have a firm grasp on what the technologies are nor do they understand the waste streams. It is important for Board members to have a solid framework in place in order to understand the downselect process. The committee decided the best method to provide this framework would be through the following:

A presentation by Todd about the philosophy of waste disposition
A poster session about the technologies that will be used for LAW treatment.
A presentation on the decision process by Rick Raymond.
A presentation by Suzanne Dahl about tank closure
A presentation by Joel Eacker, CHG, about tank retrieval.

Handouts

- M-45-00C Negotiations, John Swailes, October 9, 2003
- Tank Closure EIS Briefing, Mary Beth Burandt, October 9, 2003
- Waste Form Performance, Richard Raymond, October 9, 2003
- DOE-ORP Baseline Questions, DOE-ORP, October 9, 2003
- Tank Waste Committee Meeting Agenda, October 9, 2003

Attendees

HAB Members and Alternates

Allyn Boldt	Jeff Luke	Richard Smith
Harold Heacock	Todd Martin	Leon Swenson
Doug Huston	Gerry Pollet	

Others

Yvonne Sherman, DOE-RL	Melinda Brown, Ecology	Carrie Meyer, BNI
Mary Beth Burandt, DOE-RL	J.J. Lyon, Ecology	Billie Mauss, CH2MHill
Greg Jones, DOE-ORP	Rodger Stanley, Ecology	Rick Raymond, CH2MHill
John Swailes, DOE-ORP		Liana Herron, EnviroIssues
Steve Wiegman, DOE-ORP		Lynn Lefkoff, EnviroIssues
		Sharon Braswell, Nuvotec